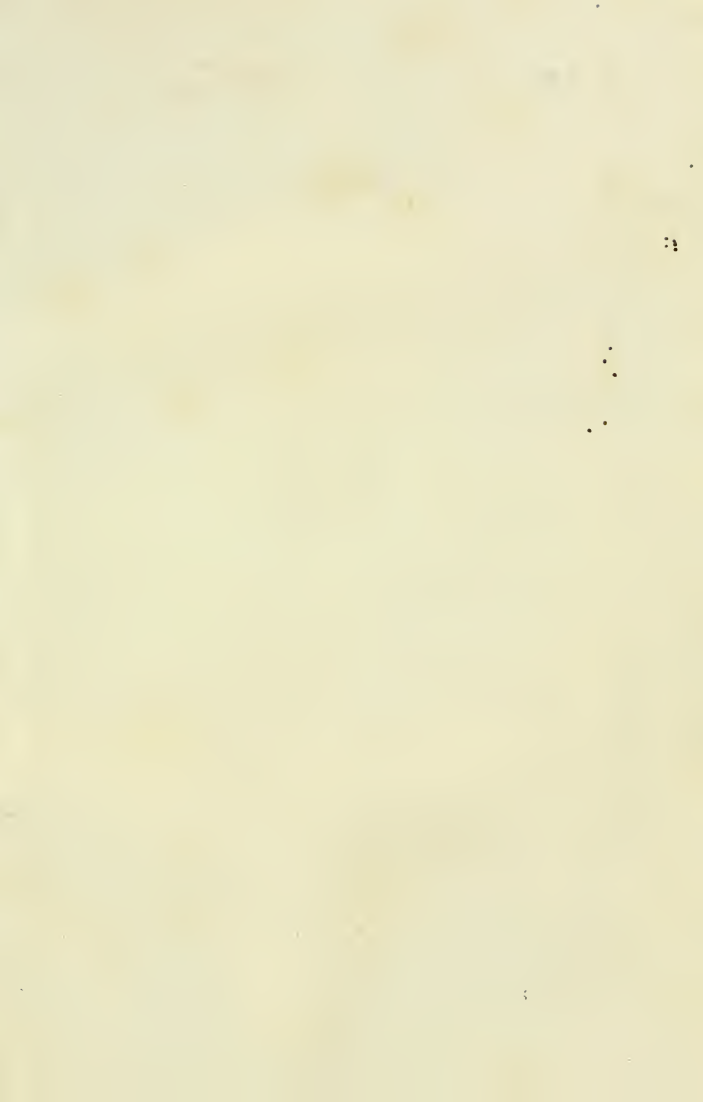


Campbell 204
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MEMORANDUM
OF
PUBLIC WORKS,
CALCULATED TO
OBVIATE OR MITIGATE
FAMINE,
AND
NOTES OF SOME DEFECTS
IN THE
ADMINISTRATION
OF
PUBLIC WORKS
IN
MADRAS.

BATH:
WILLIAM LEWIS, "THE HERALD" OFFICE, NORTH GATE.

MEMORANDUM OF PUBLIC WORKS,

CALCULATED TO OBVIATE OR MITIGATE

FAMINE IN MADRAS.

1. These works will be Reservoirs and Channels, for storage and distribution of water required for provision of food ; and Canals and Railways for its conveyance where wanted. They may be most conveniently considered district by district, commencing from the South.

2. TINNEVELLY AND MADURA. In these districts neither the rivers nor their sources of supply are such as to give scope for Irrigation Works on the largest scale. The formation of the mountain ranges backing the Western Coast from Cape Comorin to Ponany, and which may be generally named the Anay Mullays, is very different from that of the ranges north of the Palghaut gap, which run continuously up to the Bombay Territory, under the different names of the Neilgherry Hills, the Wynaad, Coorg, and the Mysore Ghauts. The Northern Ranges have their watersheds immediately on their western crests ; and consequently the greater part of the rainfall on these crests, where it is at a maximum of 150 to 200 inches, and the entire rainfall on their plateaux, where it averages nearly 100 inches, runs off through the Central and Eastern Districts of the Madras Presidency into the Bay of Bengal, while the watershed of the Anay Mullay Ranges is for the most part thrown back to their eastern edges, so that their rainfall runs off through the Travancore and Cochin Territories into the Indian Ocean. It is, therefore, only in the basins of the Cauvery and Toombuddra (Kistna) Rivers, and of the Godavery further north, that the sites of any first-class Irrigation Works may be looked for. The basins of such rivers as the Tambrapoorny and Vypar,

in TINNEVELLY, of the Goondar and Vigay in MADURA, and of the Pennar in MYSORE, BELLARY, and NELLORE, can only afford sites for works of secondary magnitude.

3. Still they are not to be, and have not been, overlooked. In TINNEVELLY, the Streevigoontum Annicut, with subsidiary tanks and channels, have lately been constructed for the better regulation and distribution of the Tambrapoornny Waters; and in MADURA a project for turning the upper waters of the Perryar River from a westerly to an easterly course, so as to supplement those of the Vigay, at a cost of £600,000, has been matured. What is now required for those districts is the thorough investigation of the sources of the Tambrapoornny, Vypar and Goondar Rivers, with a view to the selection of sites for reservoirs, competent to retain sufficient water to obviate, as far as possible, floods in the lower portions of those streams; to enable second crops to be grown wherever cultivation is already undertaken; and to supply waste tracts capable of being reclaimed. Favourable sites are understood to exist, and the local engineers have obtained general information regarding them; but their strength is not enough for the execution and supervision of *ordinary* works. *Extraordinary* works must be planned by a special staff, working under the direction of the Chief Engineer of Irrigation, and paid from the same funds with which extraordinary works are to be carried out. They must be extra to the ordinary Public Works Establishment, and not charged against it. The Perryar-Vigay project awaits action at home, which the India Office has hitherto neglected to take, though several times urged thereto by the Madras Government. It requires reference to the best engineering authorities in England or abroad, as to the use of some material for the dam, in lieu of silted earth, which should obviate the two difficulties that at present obstruct the realization of the project. Which are, the difficulty of providing for the disposal of the water accumulating during construction, and the necessity of carrying out an enormous mass of work in a disproportionately short time. But neither have European engineers been consulted; nor has an Indian engineer, selected for his acquaintance with this project in particular and his general acquirements, been allowed to travel and consult them, at home and abroad, for the benefit of the Madras Government.

4. As already explained, the tracts on which the heaviest rainfall occurs are not naturally available for the wants of the two southern districts of Madras. Their gathering grounds are at the feet of the eastern slopes of the Travancore Hills, where the rainfall is never in excess of 100 inches in the best years. The agricultural treatment of these slopes is a matter of vital

consequence to the regions between them and the Bay of Bengal, and the hands of the Forest Department require to be greatly strengthened in order to be enabled to deal effectually with them. Large tracts are owned by Native Zemindars, and it is essential that they should at once be negotiated with by Government, so that their forests shall not be acquired by private speculators either for coffee planting, or for the extraction of the valuable timber which, under such circumstances, is never replaced. There is more than enough room for the coffee, tea, and chinchona planters on the grounds of westerly trend and higher rainfall; the eastern faces of the Ghauts must be turned into Government Reserves. Unlimited grazing rights, which involve annual destructive fires throughout the whole forest region where they prevail, must be limited to actual necessities; and the practice of *Coomri* cultivation, which involves the destruction of all high forest, and the substitution of scanty crops of inferior grain, ending in total denudation and impoverishment of the tract affected, must be peremptorily forbidden.

5. Attention must here be called to the large Zemindaries of RAMNAAD and SHEVAGUNGA in Madura, and to the POODOOCOTTA State in Tanjore. There are numerous old tanks and channels in these tracts, equally dependent, with those under Government, on rainfall, and equally requiring constant attention for their proper maintenance, and special provision of improvements; for they are more especially liable from their position to suffer from drought, and the people are less cared for than in the Government Talooks, and there is no regular or adequate Public Works Establishment maintained. In times of drought the suffering is likely to be greater, less noticed, and less cared for, in the Zemindaries; and the misgovernment of POODOOCOTTA, which is still more independent of the British Government, is notorious. So that it is necessary for our own credit and the good of the people, that our intervention in their affairs shall be more decided and definite in its objects.

6. COIMBATORE, TRICHINOPOLY, TANJORE, and portions of SALEM and SOUTH ARCOT, are fortunate in lying within the basin of the Cauvery River; from which, and its affluents in the Coimbatore District, named the Bhawany, Noyel, and Ambravutty Rivers, a never-failing revenue and supply of food are derived. It remains yet to develop these supplies indefinitely by the establishment of reservoirs, and to facilitate their carriage wherever most required by canals and railways. The Neilgherry Plateau, and the valleys leading eastward from the same, and the northern slopes of the Anay Mullays and Pulney Hills, with the Cauvery Valley itself, offer the most promising field of research for reservoir sites; and

navigation may be combined with irrigation continuously throughout the Cauvery, Bhawany, and Ambravutty Valleys, the last-mentioned line being prolonged to join the western valley leading by Palghat to the Indian Ocean. A line of narrow gauge railway is also very much required to complete the network of the South Indian system, and connect directly the west and south of the Madras Presidency, via Coimbatore and Dindigul, taking Polachy, Odoomalpetta, and Pulney on the way. The total length of line is but 102, say 110 miles, and it has been for years in use as a natural line of trade in goods of considerable value. The Neilgherry Branch of the Madras Railway, which now terminates in a feverish valley below those hills, should at once be extended to Coonoor, a maximum distance of only 14 miles; whereof 5 need only be of the ordinary Indian broad gauge, and the remainder on the Fell (or Mont Cenis), or the Rhugi (Riggenbach) system, whichever may be found cheapest to make and maintain. So far as statistics can be relied on, and they are tolerably complete and full in this instance, the extension is likely to pay at least as well as any other link of the Madras Railway system, while its benefit to the Government and to the planting community will be incalculable.

7. The tract of country, of which the town of Madras may be considered the centre, including the districts of CHINGLEPUT and NORTH ARCOT, the northern portion of SOUTH ARCOT, and the greater portion of SALEM, is not traversed by any large rivers, the sources of which have reliable monsoon supplies, or offer sites for reservoirs on a large scale; though it is intersected by railways. It is a country the local irrigation resources of which have been developed under native management from time immemorial by tanks or channels, the upkeep and improvement of which is the chief thing to be attended to. Which has been done so far as action has been permitted to the local government by annual grants from the Government of India. Much has lately been done for improvement of the Palar River Works in NORTH ARCOT; but much remains to be done for improvement of the Panar River Works in SOUTH ARCOT. And neither in these districts, nor in the rest of Madras, will the maintenance of the Native Irrigation Works be put on a proper footing till the grant for that purpose is made a first charge on the gross Irrigation Revenue, precisely as the cost of collection is; and is made permanently available by a transfer from the Revenue Department for expenditure by the Public Works Department. It has been stated that there are upwards of 40,000 tanks in order, producing about £1,500,000 per annum; there is no doubt that if the Public Works Department could

reckon on 1 per cent. of that amount, £150,000 per annum, being available for their maintenance, instead of having to depend on variable annual grants, doled out by the Government of India without reference to actual necessities, the revenue would improve to an extent that would very shortly repay the increased outlay resulting from a juster policy than that now pursued.

8. Irrigation extraordinary in the NELLORE District depends on the Pennar; a river of more than local value, for it affects the Mysore country and BELLARY and CUDDAPAH Districts, through which it flows, and is connected with the KURNOOL District Irrigation from the Toombuddra River, by the Madras Irrigation Company's Canal. But its source is in a region of moderate rainfall, perhaps the worst supplied district of the Mysore Province, being robbed of what moisture passes over the Western Ghats by the Baba Booden Range. Just as the Raman Mullay Range intercepts the monsoon surplus from the Ghats still further north, leaving Bellary a most pitiful average supply. Very successful works for distribution of the Pennar water on its southern bank have been carried out by channels from a masonry damhead at Nellore itself. But something, locally inexplicable, stops the way to further improvements on the northern bank, which have been projected in connection with a dam at Sungum, 20 miles above Nellore. It was included by Major-General Rundall, Inspector-General of Irrigation, in a list of 12 additional works, estimated to cost 15 millions sterling, which he recommended in 1874, on being called on by the Government of India to review the progress and prospects of irrigation *in view to the prevention or mitigation of future famines*. That this report led to no action whatever is a grievance which justifies Sir Arthur Cotton and others in complaining that the higher authorities at home and in Calcutta, while generally approving of the extension of irrigation, will take no adequate practical steps for its realization. The dictum with which this particular project was dismissed in Government of India Proceedings, No. 707, of 27th November, 1874, viz., that "it does not require to be undertaken as specially urgent on account of famine," was not acquiesced in by the local authorities at the time; and has been falsified by the events of 1876-77 when famine raged in the very district affected, and it was specially desirable that a productive Public Work should have been in hand in that very tract of country North of the Pennar. Reversal of the present centralising policy adopted by the Government of India, with reference to the selection of and provision of funds for, Public Works seems essential to any real progress. It is in vain that the Government of India affects to

supervise the details of the Public Works Budgets of the Madras and Bombay Governments, which have been drawn up by professional officers of equal experience and ability to any that are at their disposal, and who have the superior advantage of local knowledge. Interference with details of projects and estimates is equally pernicious. All responsibility in such matters should be thrown on the local governments, together with the responsibility of utilising to the utmost the lump sums placed at their disposal ; whereof it stands to reason that loan funds should be expended as promptly as is consistent with good execution, in order that the returns may be sooner realised.

9. The Upper Toombuddra project, for fully developing the irrigational and navigational resources of that river in the BELLARY DISTRICT, in continuation of the Canal between Kurnool and Cuddapah, already opened by the Madras Irrigation Company, is another of the projects entered in General Rundall's list, at an estimated cost of £1,500,000, and postponed by the Government of India as doubtful for two reasons. These doubts, whether it could be carried out without interfering with concessions made to the Madras Irrigation Company, and whether the cost is not in excess of its possible utility, are points which should not be longer left undecided. Either the Madras Irrigation Company, which has spent £600,000 in excess of its guaranteed Capital of £1,000,000, and which is getting more and more involved annually by reason of its income being far below its working expenses, should be wound up, and its liabilities and responsibilities transferred to Government ; or an extension of guarantee should be made to all its past and future expenditure within reasonable limits. Anything is better than that the present dead-lock should continue ; a disgraceful state of affairs, in which neither the upwards extension of the works, required for insurance of the Ceded Districts against future famines, nor the downwards extension, required to supply boats and boatmen for navigation, can be worked out, owing to the conflict of private European with public Indian interests. No wonder that the Gallio-like indifference, which appears to characterise the India Office dealings with this subject, should scandalise Sir Arthur Cotton and all true lovers of the country for which they have worked. The cost will doubtless be heavy ; far in excess of the sums so roughly assumed by Sir A. Cotton, when treating of covering all India with a network of Canals, in that random manner which has so discredited his views. For this outlay of $1\frac{1}{2}$ millions sterling was only to provide for 67 miles of Canal between Wullabapoor and Bellary ; and twice as many more miles of Canal would have to be made to complete the

connection with Kurnool at a cost of at least as much more, allowing for a much easier country and smaller dimensions. That is to say, the 200 miles of Canal would cost about as much at 300 miles of broad-gauge railway, estimated at £10,000 a mile. But their value must not be estimated solely by the ordinary revenue produced, but by the security afforded against loss of men, and cattle, and capital, and revenue, involved by the constant recurrence of famine, whereof the head-quarters are situated in this unfortunate District. Witness the horrors of 1854 and 1866, intensified in 1876-77. Even if it were not determined to take up the Upper Toombuddra Project on general grounds, it should at least be started and all its details laid out on the ground; so that within 11 years from the last-mentioned date (within which period most assuredly another local famine may be reckoned on), everything might be in readiness to give timely occupation to all in want. For during the last famine, as in all previous famines, the great practical difficulty was to find employment for the multitudes who required work, that they might have pay wherewith to buy themselves food, their ordinary agricultural occupation being gone. In every district therefore, and especially in Bellary, there should be ready planned, estimated, and marked out, some great work of public utility, available for the immediate employment of labour, so that the forced outlay of a famine year might be made as profitable as possible; to the great saving of human life, and of public and private resources.

10. Assuming that the Ceded Districts shall have the first claim to all surplus from the Toombuddra River, to which they are adjacent, and that the KISTNA DISTRICT should be made to rely, as is but just, solely on the river it is named after, and which is competent, if properly treated, to meet its necessities, it is next to be observed that storage for the purpose cannot be reckoned on in the Bombay or Hyderabad territory, which have their own wants to provide for, but in the hills, where the Kistna and Kurnool Districts meet the Hyderabad state. The locality is specified with sufficient accuracy in Sir A. Cotton's proposal to the Secretary of State for India in Memorandum of 14th February, 1873; the crude ideas of which could not then be worked into shape for want of the special staff, which the Government of India declined to afford. It should form an essential portion of the Kistna Irrigation Works, which must yield their present preferential claim to the Toombuddra water to the upper Districts; and no time should be lost in authorising its investigation.

11. The GODAVERY DISTRICT depends upon the river of that name; and happily it appears to be sufficiently provided for by its ordinary flow without provision of storage reservoirs. But

these are needed for development of the inland navigation of the Upper Godavery River in connection with the works at its three barriers, on which £700,000 have already been spent; and for completion of the lowest set of which only £150,000 is required. The question of perfecting this line of cheap communication will come forward into prominence as the Hyderabad country and the Central Provinces become civilised, if it be not used by a wise policy as the chief agent in effecting such civilisation. Meanwhile nothing should prevent the lower link of the line from being made as efficient as possible by the moderate outlay last named. With improved water transit from above Badrachellum on the Upper Godavery to the coast at Cocanada, the Nizam would not hesitate much longer to work the profitable coal-fields which have been proved to exist in the north-east corner of his dominions, and to connect his capital with them and the river by an extension of the Hyderabad railway to Warungal and the third or Lower Barrier works.

12. The VIZAGAPATAM AND GANJAM DISTRICTS are difficult to deal with practically; first, because they are generally blessed with a good rain-fall, which makes the cultivators very loth to bind themselves down to take canal water; and secondly, from most of the land being in the hands of Zemindars, who would rather do without increased profits than submit to the Government inspection of their property, which improved schemes of irrigation would involve. Every difficulty is thrown by them in the way of Government Officers employed in compiling revenue returns, from which to judge of the probable advantages of the various projects proposed. And if the stage of revenue investigation is looked on by engineers as the most hopeless one through which their projects for Government Works have to pass, reference for that purpose of projects affecting Zemindary works is considered equivalent to shelving them altogether.

13. There remain only the two western districts of Malabar and Canara to be noticed. And these fortunately are exempted from famine by the never-failing supply of rain brought them by the south-west monsoon. Very much has been done in the way of facilitating land communication in these districts by cart roads and ghauts leading from the interior to the ports; and what more is required can be supplied as wanted from local resources. But improvement and development of the Coast Canals, both on this and the other side of India, are a great desideratum, for the speedy realisation of which provincial funds are insufficient; and contribution should be made from surplus revenue, before it is swept into the Imperial Exchequer and appropriated to the fostering of districts under the Government of India.

NOTES

OF SOME

DEFECTS IN THE ADMINISTRATION

OF

PUBLIC WORKS IN MADRAS.

1. A lengthened service of many years in the Public Works Department of the Madras Presidency has made the writer cognisant of certain grievances under which its administration has suffered. And he is desirous of setting these grievances plainly before those who are interested in the better government of India; in the hopes that fairer play will be given by the Supreme Government to the Local Government, and by the Local Government to its Public Works Officers, than either have hitherto received. The writer has no longer any personal interest in the matter, and his sole object is to strengthen the hands and facilitate the work of others with whom he has been associated for years; and who will for the most part testify that the grievances which he brings to notice are not imaginary, but such as have grievously interfered with the efficient working of the important department to which they belong.

2. The first grievance relates to the treatment of the Madras Public Works by the Government of India ; and the first example brought forward is that of the Upper Godavery Navigation Works. These were projected by Madras engineers, and so far as they have gone were carried out by Madras engineers. But though the base of the working operations, and supplies of men money and materials, was in the Lower Godavery District of the Madras Presidency, the establishment was considered as being part of the Public Works Establishment of the Central Provinces, on the plea of the Upper Godavery River having been made by treaty with the Nizam, expressly on account of these works, the southern boundary of that new Province. Its aggrandisement, and that of the Public Works establishments under their own orders, being an object with the Government of India, regardless of the feelings of the Madras Government and officers, and of the best interests of the project itself. It was a hobby with one Commissioner of ambitious views and active habits ; but was blighted by his more cold-blooded and easy-going successor, who neither knew nor cared for so wild and inaccessible a part of his charge. It then, accordingly, suited the views of the Government of India to re-transfer the nominal charge of the works to the Madras Government after £700,000 had been spent ; accompanying the gift with an annual maintenance allotment of less than £1,000, and their gracious permission to complete the works at the first or lowest barrier, if the £150,000 required could be made available from the Provincial Funds of the Madras Presidency (of the financial position of which funds more anon). The first point which it is the intention of this paper to advocate is the dedication of £150,000 from Imperial, *not Provincial*, Funds, to the completion of this one link in the chain of the Godavery navigation, as necessary to prevent the large capital already sunk in the work from being entirely wasted ; and not more than commensurate with its value, as opening up a considerable tract of the Central Provinces and Nizam's dominions to trade with the coast, and the grain and salt-producing districts of the Lower Godavery. Had this great work been left in the hands of the Government whose officers projected it, it may safely be asserted that it would have been prosecuted more systematically and economically ; and its first section at least completed for much less than the sum actually expended. It was adding insult to injury to throw it back on their hands incomplete, and without resources ; to be worked out, if at all, by local taxation of a people whom it scarcely concerned.

3. Take next the East Coast Canal to connect Madras with the Kistnah and Godavery Deltas in the north, and the Tanjore

Delta in the south. A commencement was made with the former extension about a dozen years ago, from the net profits derived from tolls on the existing section near Madras, after defraying the expenses of the yearly clearances. But the amounts annually available were too small for effectual progress, and it was decided to dedicate them towards paying off by instalments, with interest, a capital sum to be advanced by the Government of India, as required year by year. This arrangement had lasted but a few years when the Government of India took alarm at the financial state of the work, and wrote to the Madras Government on the subject of its management, in such outrageous terms as could not be fully replied to consistently with that respect which was thought due to the supreme power, or with the self-respect due by the Madras Government to itself. The despatch therefore remained unanswered, and the works at a standstill, until Lord Napier's transfer from Madras to act as Governor-General at Calcutta; when it was arranged that they should be brought forward again. The dignity of the subordinate Government was preserved, and the overbearing conduct of the presiding Government rebuked, by the re-payment of all pecuniary obligations, and the prosecution of the work from Provincial Funds at the disposal of the former. These were not however adequate to provide for as speedy progress as was desirable with such a length of canal; and but for the occurrence of the famine of 1876-77, when its rapid completion was taken in hand as a Relief Work, it would probably have been twenty years before inland water communication was established between the Kistnah District and Madras. Care must be taken to realise the fact that this is not a canal of irrigation but a navigable salt water canal only; and as such it is probably the only canal to which Sir A. Cotton's estimate of £3,500 a mile will apply. It is owing to some misapprehension on this subject that Mr. Monier Williams has been led to write of "all the belts of land reached by the grand system of irrigation which stretches between the Godavery, Kistnah, and Cauvery Rivers," the fact being that the two latter irrigation systems are separated by several hundred miles. And it is not quite satisfactory to find such an erroneous statement quoted both in Sir A. Cotton's pamphlet, and in his paper read before the East Indian Association, without any note of correction. The repetition of such erroneous statements by Sir Arthur is another justification of the suspicion with which he complains that his proposals are viewed by the Indian authorities and officials. What is now wanted however is, that the Government of India shall be shamed by public opinion into a reversal of their niggard policy in reference to the completion of this coast

canal, at least from the Kistnah to the Cauvery; supplying special funds and special establishments for a few years, until those fertile districts are connected by land, and cheap water carriage made available for carrying their produce to Madras, whence further distribution in all directions may be made by rail.

4. The interference of the Government of India with Public Works arrangements at Madras has not only been carried to an unjustifiable, impolitic, and ungenerous length as regards the works themselves, but has stooped to the persecution of individuals whose only fault was that the views they held were those of the Local Government which they directly served, and opposed to the introduction of a centralising policy. Mr. Brock, the Controller of Public Works Accounts at Madras, having taken sick leave to England, his place was temporarily filled by an officer of the Accounts Department of the Government of India; of whom it will be sufficient to say that his inferior education and training made him unacceptable, and together with his utter ignorance of local matters, rendered all his efforts at centralisation nugatory. Rather than abandon the attempt to assimilate the Accounts and Establishments of Madras to those of the Government of India, the step was then taken of arresting the return of Mr. Brock to his original appointment, although it was desired by the Madras Government; and of ordering him to an inferior post in a climate which in his then state of health he dared not face, although he had not accepted conditions of general service, and was not fairly liable for service out of his own Presidency. The only alternative was resignation of the service, and this was accordingly forced upon a perfectly efficient man against his own wish and that of the Government whom he served; with the sole object of appointing as his permanent successor an officer whose financial ability and devotion to a centralising policy were undoubted, while his utter ignorance of local matters was neutralised by the audacity and self-reliance with which his official statements were laid before confiding members of Government, unchecked by the local officers who were alone capable of verifying them. The unfortunate victim of this procedure, the sufferer whom the progress of what is called an Imperial policy crushed under its wheels, now vegetates in England, on a pittance utterly inadequate to support himself and family, or to provide for the latter in the manner that their early prospects, forfeited by no fault of their father's, gave them the right to expect. It is not too late to do justice to Mr. Brock's claims, by providing him with employment in the Indian Office, for which he is perfectly competent, and which would benefit greatly by interchange of its staff with those of the Indian Secretariats. And the sooner some limit is placed

on the meddling and muddling with local affairs which takes place when individuals on the Government of India staff are allowed their own way unchecked the better. Some forty years ago a weak Governor-General was led into a disastrous policy regarding Afghanistan, by deference to the opinions of ambitious secretaries ; it is hard that their interference should disarrange the affairs of the minor Presidencies, whose local peculiarities absolutely demand that they shall be ruled in all details by those to whom the people and their ways are familiar. Subordination does not necessarily imply centralisation.

5. It may be stated that the Home policy of the Government of India is, in effect, a decentralising policy ; in proof whereof reference will be made to their Orders giving effect to the separation of Provincial from Imperial expenditure. But it requires to be made known to the world that those orders were framed and passed without previous consultation with the Local Governments ; that the basis whereon the assignments of Provincial Funds was laid down was grossly unjust ; and that, in fact, their result, if not their object, was while retaining a hold upon all surplus Imperial revenues, however increasing, to relieve the Supreme Government of all further demands beyond a fixed sum, calculated upon assumed and low averages of grants for former years, which had in vain been protested against as inadequate to the purposes for which they were assigned. It was a mockery to say that the Local Government were at liberty to increase their Provincial resources by local taxation when Local Boards and Municipalities were already at their wits' end to raise sufficient funds to meet their various needs. And it was simply iniquitous to force on them the maintenance of all the thoroughfares of the country, so as to leave no provision for its byeways ; and to ignore that the water supply and drainage of the seats of Government at head-quarters and in the districts were matters of Imperial interest primarily, and beyond the unaided efforts of local authorities. By Financial Resolution of the Government of India, No. 3334 of 14th December, 1870, it was declared "desirable to enlarge the powers and responsibilities of the Governments of Presidencies and Provinces in respect to the public expenditure in some of the civil departments," and "expedient that, as far as possible, the obligation to find the funds necessary for administrative improvement should rest upon the authority whose immediate duty it is to devise such measures." The Government of India were accordingly pleased to make over to the Governments of Oudh, Central Provinces, Burmah, Bengal, N.W. Provinces, Punjab, Madras and Bombay a total assignment for Provincial Services of £4,688,711, being

£330,801 less than the total assignment of 1870-71; whereof the assignment to Madras amounted to £739,488 per annum, calculated under the following heads, viz.:—

	Grants.	Estimated Receipts.	
Jails.....	£91,983	£7,300	{ Grant more than covered by Receipts
Registration	22,970	34,000	
Police	350,730	32,350	
Education	90,052	6,900	
Medical Services...	61,696		
Printing	25,840	1,260	{ Subsequently increased by £853 and £2,400 on account of the Upper Godavery Works
Roads and Miscellaneous Public Improvements...	133,880		
Civil Buildings ...	58,506		
Public Works Establishments.....	47,421		
Tools and Plant ...	3,648		
Totals	876,726 81,810	81,810	
Net Assignment of 1870-71	724,916		
Proportion of the total reduction of £350,000*	55,428		
Permanent Assignment	739,488		

* Round number.

6. The practical effect of basing the permanent provincial grant on an average of annual grants originally insufficient, and from which a deduction of one-fourteenth was arbitrarily made, will be understood from an analysis of the Madras Budget Estimate of provincial funds for the year 1876-77, as under, viz. :—

	Receipts.	Grants.	Compared with Grants of 1871-72.	
			Net Excess	Net Decrease
Refunds		£420		
Jails	£24,800	102,236		£7,247
Registration	38,000	28,577	£1,607	
Police	2,600	360,000	39,020	
Education	7,100	99,213	8,966	
Medical	1,066	58,771		3,991
Printing	1,810	24,280		2,110
Marine	2,410	1,146		1,254
Minor Establish- ments		22,801		
Office Rents, Rates & Taxes	11,200	6,800	38,348	
Miscellaneous ...		19,947		
PUBLIC WORKS				
Petty Construc- tion & Repairs of Miscellane- ous Depart- ments		6,200		
Provincial Works and Establish- ments	5,200	85,000		47,455
Grants for Local Fund, Works and Estimates		90,000		
		905,396		

The interpretation whereof is that to meet a heavy net increase under two out of six heads of account for which assignments had been made, and a heavier *extra* charge under three heads for which no assignment had been made (no previous consultation with local governments having been vouchsafed), the Public Works grant originally protested against as insufficient, but never-

theless curtailed by one-fourteenth of its previous average, had to be reduced by one-fifth to make both ends meet. In vain did the chief engineer of that unfortunate department protest against the supineness which acquiesced in such a financial state of affairs, without remonstrance from first to last against the Government of India proceedings which had led to it, or any local action to retrieve it. He was simply informed by Financial Order, No. 859, of 13th May, 1876, that "there were other services entrusted to their administration of even more importance than "Public Works, the requirements of which are daily increasing, "and are more imperative, *e.g.*, Education, Police and Jails; and "the increasing expenditure in these directions, which cannot "possibly be avoided, absolutely restricts the means at the disposal of the Government for Public Works." As if he was not already thoroughly acquainted with the *facts* of the case, and only pleaded for action to be taken one way or another to bring about a more reputable state of affairs. But finance is not a strong point with the rulers of India anywhere. At Madras it forms one out of a number of miscellaneous subjects, which the chief secretary to Government is supposed to have so much more than enough time and knowledge to attend to, that he is *ex-officio* authorised to meddle with matters appertaining to departments to which special secretaries are told off. The mischievous result of such meddling may be imagined.

7. The pusillanimous conduct of the Madras Government, in accepting without effectual protest the insufficient allotment of funds granted them for Provincial purposes, is strikingly in contrast with that of the Bombay Government; which, on the attempt being made to appropriate for Imperial purposes certain special funds raised by sale of lands at Bombay, took such spirited action in at once utilising them in works of great and general importance, that the Government of India were forced to recognise the justice of their claim; and ever after took care to deal with their annual Budget Estimates in a far more liberal manner than with the smaller demands of the Southern Presidency. Not only were the grants for military purposes in Madras cut down to ludicrously small amounts, but the progress of the most remunerative Irrigation Works has each year been crippled by the insufficiency of the allotments necessary for their speedy completion and full development. And the maintenance of the old native tanks, which are scattered over the country in thousands, and on which its revenue is greatly dependent, has been very inadequately provided for. Year after year has it been represented that their condition was deteriorating, from the small allowance made of repair funds, and of funds for carrying out the minor improve-

ments to their sluices and surplus weirs, which their condition rendered absolutely necessary. The Madras Government might well have insisted on their right to appropriate, as a first charge on the revenue produced by these works, such a moderate percentage as would have ensured their maintenance and improvement. One per cent. would probably have sufficed for the purpose ; and it should never be credited to the Imperial Revenues at all, but be deducted from gross revenue just as the charges for collection are.

8. It is one great drawback to the efficient working of every separate department in the Madras Presidency that within its limits what may be termed the old patriarchal system of Government, as distinguished from the more modern system of governing by Departments, retains its baneful hold on the country. That is to say, it is the most Civilian-ridden presidency of India ; hence, perhaps, its nickname of the "Benighted." It is indeed an anomaly that the longest settled and least dangerous tract of India, and consequently that most fit for being ruled under the ordinary system of civilised Government, should continue to be weighed down by the attempt, on the part of the Revenue and Magisterial officers, to perpetuate a supremacy which they fairly enjoyed when they were almost the sole representatives of the British rule in their respective Districts. The Collector-Magistrate and his covenanted assistants were then necessarily Jacks-of-all-Trades ; and the covenanted Civil Service of India is worthy of all credit for the manner in which it administered the country during its transition from under the traditions of Native rule to those prescribed by European example. It may be questioned whether the latter have not been brought forward in supercession of the former with too great rapidity. The process would probably have been a slower one had the Haileybury race of civilians continued ; and has been accelerated by the transfer of power to a race of Competitioners. The more reason, therefore, why these latter should accept the altered position of affairs in all its circumstances ; should realise that their Revenue and Magisterial duties are weighty enough to demand all their time and ability for their adequate performance ; and should with a good grace resign the lead in the Public Works, Forest, Educational, Sanitary, and other Departments to the professional experts trained to deal specially with the subjects of those branches of administration. The Engineer Officer, who is of sufficient standing to remember the good old times when he acted only as Consulting Engineer to the various collectors of his Division, under whom the ordinary road, irrigation, and building work of the country was carried out on the smallest of scales, cannot but

regret his present comparative severance from the Native officials of every town and village, to whom he was then as it were accredited by the chief authority of the district. But he is the more desirous of carrying out the works with which he is charged for their benefit, in harmony with them and with their views, so far as these are compatible with correct principles. It is not his fault *generally*, if his position as the Supervising or Executive Public Works Officer of a district is a false one, and every step that he takes in prosecution of his duties, if not thwarted by the opposition, is at least delayed, or hampered, or made more costly, by the want of co-operation or inaction of men who are personally interested in his works, and off whose shoulders he has taken their burden. No doubt there are engineers whose crotchets and ill-temper, allied to self-conceit and real ignorance, make them perfect nuisances in every district which has the misfortune to be afflicted with them. But the great majority of the Public Works Officers and Subordinates are competent, and willing, and industrious; and feel deeply both the unjustifiable interference and the depreciation of its services, to which the Department generally is subjected at the hands of the covenanted civilians in the Government, in the Revenue Board, and in revenue charge of districts. This, the most influential body of men in the country, has never fully acquiesced in the entire transfer of the Public Works Executive from their own to a special agency, which was brought about by the Public Works Commission Report of 1854; and through its representatives in the Revenue Board, its two Secretaries to Government, and its two members of Council, all at Government head-quarters, and possessing the ear of the Governor, has never ceased complaining of and meddling with the organisation of the department. Thus, the original organisation of 1856 having been by districts, was changed to a divisional system under superintending engineers in 1863, which again was superseded by a district organisation in 1872. And it is solely in consequence of the famine having engrossed all the attention of Government in 1876 that superintending engineers were not set up again in that year. And all this chopping and changing has been uncalled for except by civilians; while it is not too much to say that the Public Works Report of 1870, on which the change of 1872 was professedly based, was drawn up directly in the face of all the best evidence given before the Commission; by the three civilian members, of which it was issued, against the protest of its two engineer members. So able indeed was that protest, drawn up by Colonel Mullins, R.E., the present Chief Engineer for Irrigation, that it opened the eyes of the then Governor, Lord Napier and Ettrick, to the attempt made entirely to subordinate the

Public Works to the Revenue Department, on the false plea of deterioration of the works of irrigation since the transfer of the executive. The only foundation for that statement was discovered to be the disuse of "Customary Labour" that was exacted from the cultivators for tank and channel repairs without payment, so long as the revenue authorities had the executive charge of such works ; but which was withheld by their connivance, sometimes by their instigation, from the officers of the new department, who, without personal revenue, experience and magisterial power, and the active co-operation of those who had, were compelled to pay for all labour even when employed in repairing the consequences of the cultivators' own mischief or neglect. Hence the ancient custom of "*Kudi Maramut*," or gratuitous supply of customary labour, has fallen into desuetude.

9. Never was the jealousy with which the revenue civilians of Madras look upon the independent action of the Public Works Officers more disgracefully or more disastrously exemplified than in the late famine. In Bombay there was neither indecision in the reports of the revenue officers as to the imminence of the danger, nor was there the least hesitation as to the organisation of relief. While in the adjacent districts of Madras, where the famine first showed itself, through ignorance of the actual results of former seasons, and fatal reliance upon the recuperative power of the N.E. Monsoon Rains of October and November, the alarm was taken too late ; and efficient action in the right direction was prevented by the urgent requests of the revenue officials that the entire control of Relief Works should be vested in them, and the Public Works agency not called in. Backed up as were these requests by the Board of Revenue, through which they were sent in, the civilian members of Council had little difficulty in leading the Governor to take a first wrong step in action, which he afterwards had occasion to bitterly regret, and which was severely blamed by the Government of India. But what could he, a stranger to the country till a twelvemonth before, do but trust to his experienced colleagues, who gave him so little warning of the impending crisis, that he actually spent some weeks of valuable time with his family in a cruise to the Andamans, Rangoon and Ceylon, countries not under his rule, and round by sea to the western districts of Malabar and Canara which were safe from famine, at a time when, if the Revenue Officers had been really acquainted with their districts, the note of alarm should have been loudly sounded, and preparations for encountering the impending famine should have been put in hand. But so greatly are Revenue Officers in the habit of postponing their own special duties to others with which they conceive themselves heaven-

inspired to deal, that the agricultural statistics of the country are quite unreliable. For instance, those received from the Irrigation Deltas, though presumed to have been revised in the Revenue Board Office, have year after year to be returned from the Government Office for explanation and correction of errors and inconsistencies of the grossest description, which utterly preclude their utilization for the purpose of correctly estimating the financial results of the great Irrigation Works of the country. Hence the worthlessness of the forecast of probable total outlay on Famine Relief Works in each district, prepared by the Board of Revenue in December, 1876. It professed to be based on the general condition of the several districts *so far as the Board knew it*, and the extent to which the population had already sought employment where offered. But as their knowledge of the districts was founded on the random opinions of collectors, gleaned from the loose statements of their native subordinates, unsupported by reliable agricultural statistics, the conclusion that distress would come to a climax in the following April or May, and end in September, was but a lame and impotent one; grievously falsified by the fact of upwards of two and a quarter millions of people being employed on Relief Works, and gratuitously fed, in the latter month. A really accurate forecast may have been beyond human prescience to frame; but it did not require the agency of a so-called Board of Revenue to make so marvellously bad a *guess*. And it is high time that means were taken to insure the acquirement of more accurate knowledge of the actual state of each district from year to year than is now available. The first steps towards which would be the abolition of the Revenue Board, as an antiquated body, which does not exist elsewhere but in the Lieutenant-Governorship of Bengal, and of which, in section 5, para. X. of his Minute of 10th June, 1870, on the re-organisation of the Public Works Department, Lord Napier and Ettrick expressed his unfavourable opinion, after several years' experience of the ignorance which it perpetuated, and the delays to business which it created.

10. It is only very lately, and with great difficulty that Madras collectors have been persuaded to acquiesce in being relieved of all connection with postal duties. To the last they clung to the old system of carrying their district posts by Peons attached to the offices of the Native Revenue Subordinates; and considered it desirable that the receiving houses should be in these offices, in order that those who posted and received letters might be marked men, to the possible facilitation of police and magisterial inquiries. And the probability is that this combination of the duties of postman and spy might have been perpetuated

to the present time, but for the activity and tact with which the late Postmaster-General of Madras reformed the department of which he had charge ; in which task he was greatly helped by the weight and prestige of his name, he being the brother of the late Lord Mayo. On his retirement the appointment, being placed on such a footing as to lead up to higher positions, was for the first time considered worth appropriation by a member of the Covenanted Civil Service.

11. This process was reversed in the Sanitary Department ; which when first created was placed under the orders of a Covenanted Civilian, destitute of any special qualification but that of self-sufficiency, but who was wet-nursed by a secretary in the person of the duly qualified medical officer who now ably fills the post. And at the present moment it is the greatest drawback to the happiness of the civilian members of Government that they have to transact all Public Works business with a professional secretary instead of one of their own cloth. The objections of the Covenanted Civilians to the intrusion of Engineer Officers into the Government Secretariat were strongly represented in the Report of the Civilian majority of the Public Works Commission of 1869-70, already alluded to ; and they were again laid before the Government of India in 1876, but only to be once for all thrown over. Neither with Lord Napier and Ettrick, let it be said, nor with his Grace the Duke of Buckingham, did the idea find favour ; though the latter would have preferred as secretary an officer of junior rank to the Chief Engineer, whose opinion if called for at all might therefore be more easily over-ridden than that of the latter.

12. The Forest Department is one that, in the Madras Presidency, has not till last year been emancipated from the interference of Collectors of Districts with its work, to such an extent as to paralyse departmental action and control, and systematic treatment of Forest Reserves and Plantations on fixed principles. It was right that care should be taken to protect the rights of villagers to free grazing for their cattle, and to free supply of timber for their own houses and ploughs and carts. But it was the theory of the Covenanted Civilian that none but himself could be trusted to see to such rights ; and the result of his patronage of them was to perpetuate abuses, whereby the needs of the country at large were ignored, the forests subjected to danger from annual fires, and the survey and inclosure of Reserves neglected. And at the same time much money was allowed to be spent in experimental hobbies taken up by particular collectors, but probably neglected by their successors, and sure to be unproductive in the long run. At last the independent

position of the Superintendent of the Forest Department, hitherto subordinate to the Revenue Board, has been recognised, and the distinction between Imperial and Local Forests has been practically abrogated, so far that they will henceforth be worked under one system, on sound principles, by his subordinates, under orders issuing direct from himself, and not emanating from the Collector's Cutcherry. Considering the bearing that the preservation of forests has on retention of moisture in the soil, and mitigation of floods, there is no doubt but that the setting of the Forest Department on a proper footing will have a markedly good effect in influencing the water supply available for irrigation and navigation. There are many blocks of hilly waste land scattered about the Districts of the Madras Presidency which might be arranged to be handed over to the Forest Department for inclosure and systematic treatment ; which will result not only in the production of more and better timber and firewood for the general market and for railways, but also in improvement of the quantity and quality of the grass, which is the only food of the cattle of the country. It would be well if the Government Agricultural Establishments could also be taken out of the leading strings of the Revenue Board, and of the Civilian Amateurs up country, who at present attempt to direct the operations of the few men specially trained to such work that are now employed in Madras. It would surely be a change for the better to amalgamate them with the Forest Department, and so strengthen the hands of both these weak agencies.

13. The power thrown into the hands of the Revenue Collectors by the Madras Local Funds Act has been turned to account by some of them in a manner which consoled them, as doubtless the concoctors of that Act intended, for Lord Napier's failure to subordinate the Public Works Agency to them entirely. Strong in the position of *ex-officio* Presidents of Local Fund Boards, and absolutely controlling the votes of all their nominees, the non-official members, several Collectors distinguished themselves by attempts to harass and bully the Public Works Agents, by whom the proceeds of the road cess and tolls, and of the large contribution from Provincial funds, were expended. And where the District Engineers were men of inferior calibre, unable to manage the affairs of their own department and to hold their own against injustice, their subordinates had a bad time of it. And as all correspondence on Local Fund Works was carried on between the Revenue Board and the Financial Department of Government, the Chief Engineer was as seldom as possible afforded an opportunity of setting matters straight, and not a few Government orders were issued which more than once nearly brought

matters to a dead-lock. But, although applicable to all Districts, in those presided over by Collectors of right feeling and Engineers of ability, such objectionable rulings were ignored, and not allowed to be acted on. Still, on the whole, the working of the Local Funds Act as regards Public Works has been most inharmonious ; and requires to be thoroughly revised and supervised by Government in the Public Works Department.

14. An attempt was made some years ago to improve the constitution of the Council of the Government of India, as to its capacity for dealing with the important subject of Public Works, by adding an Engineer member to its number. The object Lord Salisbury had in view, as stated by him, was to afford a check of excessive expenditure on Public Works, attributable to estimates being habitually exceeded. But the remedy applied was as ludicrously ill-adapted to that purpose as his choice of the Lawrence Asylum for an illustration of a work the cost of which had exceeded its estimate was unhappy. For it was the prosecution of that work, *in anticipation* of any estimate (for which the Madras Government, and not its Engineers, was solely responsible), that constituted the irregularity that was committed, while there could be no greater fallacy than to suppose that estimates for works in Madras or Bombay could be effectually checked by an officer at Calcutta who had no Indian experience whatever. What was required was to strengthen, not the Government of Indian Council, but each Local Council, by a professional member ; as advocated by one of the Engineers examined before the Madras Public Works Commission of 1869, in the following words, viz. :—"There is an impression that the Public Works Department has too predominating an influence with Government, in consequence of its Head being a Government Secretary. I consider such influence insufficient to counteract non-professional views, urged by Collectors and the Revenue Board, on a Government the local members of which are exclusively Civilians ; and I consider that the adequate development of Public Works, on a scale commensurate with the wants of the country, involves the addition of an Engineer member to the Executive Council." Such professional member should by preference be a Military Engineer, to assist with the Commander-in-Chief in the discussion of military matters. But a similar representative of Madras is as greatly required in the Indian Council, where there is not at present one person specially competent to advise on Irrigation or Military concerns of the Madras Presidency. In fact, out of 15 Members of the Council of India only one hails from Madras, and he by no means a representative man. It might be too much to expect of the Secretary of State

for India that he should take counsel with Sir Arthur Cotton himself—or with either of his devoted adherents—General Rundall and Colonel Haig, as men of one idea, and committed to its elaboration, *coute qui coute*; but in Major-General Frederick Cotton, R.E., the well-known Chairman of Council of the Society of Arts, the joint author, with Sir George Balfour and Mr. Bourdillon, of the Report of the Public Works Commission of 1851-52 (the most useful paper ever drawn up on the subject), the Madras Presidency possesses an officer of great Executive and Revenue experience; deeply interested in the welfare, and fully informed of the wants, of the country in which he has served; and able and willing to put into practicable shape all the crude Irrigation and Navigation projects that have been brought forward by his brother; with a discrimination, tact, and accuracy of statement, want of which has hitherto prevented what is really valuable in these projects from receiving the attention that is their due.

